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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/423,911	02/28/2000	REIMAR FINCK	3245-704PUS	7288

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EXAMINER

COMBS, JANELL A

ART UNIT PAPER NUMBER

1742

DATE MAILED: 06/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/423,911

Applicant(s)

FINCK ET AL.

Examiner

Janelle Combs-Morillo

Art Unit

1742

-- The MAILING DATE of this communication appears on the cover sheet with the corresponding address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 April 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 5-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 5-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Interpretation

1. The phrase “as a final step for producing the aluminum strip for can making” has been interpreted by the examiner in light of the specification to be drawn to an intermediate strip gauge, as opposed to a final strip gauge. Nowhere in the specification does it teach that final can stock sheet gauge (see instant specification page 5 line 5 and page 6 lines 18-19) is reached solely by hot rolling, thereby eliminating cold rolling. Therefore the “final step” as mentioned above is held to be analogous to the intermediate gauge sheet taught by the prior art (see also discussion below).
2. The phrase “above the recrystallization temperature of the rolled strip within a range including 315°C to 320°C” (a range within a range) is interpreted by the examiner to mean above the recrystallization temperature and optionally between 315-320°C.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
4. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Daly et al.

Daly et al teaches a process for producing aluminum strip comprising the steps of: hot rolling an aluminum strip in a single stand reversible hot mill (column 3 lines 23-24) while minimizing recrystallization (column 3 lines 36-37), coiling, and annealing in a furnace at 315-

Art Unit: 1742

399°C (column 3 lines 35, 49-50), which overlaps the presently claimed annealing temperature range. The hot roll exit temperature is 249-405°C, which overlaps the presently claimed hot roll exit temperature range. Daly teaches “all hot line recrystallization at gauges below 1.90 cm (0.75 inch) or 1.27 cm (0.5 inch) is avoided. This favors cube texture development in the metal when the hot line exit material later recrystallizes, such as during batch anneal or continuous anneal” (column 3 lines 42-46). The examiner points out that the final hot rolling thickness ~0.2cm (example) or 0.13-0.38 cm (column 6 line 2). Therefore, Daly clearly teaches avoiding recrystallization in at least the last hot rolling pass.

Daly et al does not teach a roughing stage to form a strip. However, the examiner asserts that the presently claimed roughing step is included in the step as taught by Daly et al of hot rolling an aluminum strip in a single stand reversible hot mill (column 3 lines 23-24). Daly et al does not specify that the last three hot rolling passes are carried out without recrystallization. However, because Daly et al teaches against recrystallization at gauges below 1.9 cm or 1.27 cm (column 3 lines 42-46), it would have been within the level of one of ordinary skill in the art to carry out three hot rolling passes to a final gauge of 0.13-0.38 cm (column 6 line 2), without recrystallization.

Because Daly teaches a process of hot rolling aluminum into a strip with a finishing temperature that overlaps the presently claimed range, wherein hot rolling at gauges below 1.9 cm or 1.27 cm is performed without recrystallization (column 3 lines 42-46), followed by coiling said strip, and annealing at temperatures that overlap the presently claimed range, Daly et al is held to create a prima facie case of obviousness of the presently claimed invention.

Art Unit: 1742

5. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Daly et al. in view of JP 07-041896A (JP'896).

As stated above, Daly et al teaches a process for producing sheet for can stock by hot rolling and heat treating substantially as presently claimed. Daly et al specifies that "the hot mill schedule is such that recrystallization in the hot mill is minimized or reduced" (Daly column 3 lines 36-37). Daly teaches the hot roll exit temperature is 249-405°C, which overlaps the presently claimed hot roll exit temperature range (260-280°C).

JP'896 teaches that it is important to warm roll $\geq 30\%$ in a temperature range of 100-350°C after hot rolling, because an Al-Mg type alloy sheet excellent in deep drawability can be produced (wherein said working performed on a Al-Mg alloy creates a particular crystallographic texture that is excellent in formability, see abstract). Because JP'896 teaches warm rolling $\geq 30\%$ reduction, it is held to be within the disclosure of JP'896 to carry out three rolling passes are without recrystallization (instant claim 6).

It would have been obvious to one of ordinary skill in the art to perform the working and heat treating process of Al-Mg strip used for can stock taught by Daly, wherein the strip has a "hot" rolling exit temperature that falls within the presently claimed temperature range because Daly teaches a broadly overlapping temperature range of 249-405°C, and because JP'896 teaches that "hot" rolling in the range of 100-350°C (warm rolling is defined as below the recrystallization temperature, see discussion below) improves deep drawability and formability.

6. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Daly et al in view of Windhaus et al (US 5,548,882 A).

Art Unit: 1742

Daly et al teaches an apparatus for hot rolling aluminum comprising: a means for reversing rough rolling (Fig. 1B), a means for finish rolling, said means including a four high reversing roll stand with winding devices on each side (Fig. 1D), and a heat treating means (Fig. 1C).

Daly et al does not teach said heat treating means is a pusher type furnace with a pallet transport system or a means for transferring said coil to a furnace.

Windhaus teaches a means for transferring the coiled strip to the heat treating means, including a pusher-type pallet system (column 1 lines 48-51) which transports the coils through the furnace. Additionally, Windhaus teaches means for transferring the coiled slab bundles to the pallet car (column 2 lines 20-23).

It would have been obvious to use the pusher type pallet system as taught by Windhaus, in the strip making plant taught by Daly, because Windhaus teaches that said transporting pallet system reduces the risk of deformation of the bundles by the transporting means (column 1 lines 58-60).

Response to Arguments/ Amendment

7. In the amendment filed on April 7, 2003 applicant amended claims 5 and 7, and the instant specification. The 112 second paragraph rejections have been overcome.

The argument that the phrase “as a final step for producing the aluminum strip for can making” excludes cold rolling has not been found persuasive. This phrase has been interpreted by the examiner in light of the specification, which clearly does not teach the elimination of cold rolling in order to reach final can stock sheet gauge (see instant specification page 5 line 5 and

Art Unit: 1742

page 6 lines 18-19). Nowhere in the specification does it teach that final gauge is reached solely by hot rolling. Therefore the “final step” as mentioned above is held to be analogous to the intermediate gauge sheet taught by Daly. If the applicant meant a different interpretation of said phrase, then the examiner requests applicant to show where the different interpretation is supported by the instant specification.

Applicant's argument that the present invention is allowable over the prior art of record because Daly (though broadly overlapping) does not teach final hot rolling at a specific narrow temperature range of 260-280°C, has not been found persuasive. As set forth above, Daly teaches a broadly overlapping temperature range, as well as motivation to eliminate all hot line recrystallization at gauges below 1.90 cm (0.75 inch) or 1.27 cm (0.5 inch), wherein the final hot rolling thickness ~0.2cm (example) or 0.13-0.38 cm (column 6 line 2). Therefore, Daly clearly teaches avoiding recrystallization in at least the last hot rolling pass.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

Art Unit: 1742


however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janelle Combs-Morillo whose telephone number is (703) 308-4757. The examiner can normally be reached on 7:30 am- 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (703) 308-1146. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-7719 for regular communications and (703) 305-7719 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

jcm
June 10, 2003


GEORGE WYSZOMIERSKI
PRIMARY EXAMINER